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Donald F. Haas

Date: January 20, 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	
CHARLES L. EDWARDS, KIRK H. RANEY, and PAUL G. SHPAKOFF	
Serial No. 10/678,889	Group Art Unit: 1751
Filed October 3, 2003	Examiner: Necholus Ogden Jr.
BRANCHED PRIMARY ALCOHOL COMPOSITIONS AND DERIVATIVES THEREOF	January 20, 2006

ASSISTANT COMMISSIONER FOR PATENTS
Washington, DC 20231

Sir:

RESPONSE

The following remarks are submitted in response to the office action of November 3, 2005.

Claims 57 through 74 are pending in this application and all of the claims were rejected under Section 103(a) as being unpatentable over Tsujii et al., "Physicochemical properties of anionic surfactants with poly(oxyalkylene) group in water." This rejection is respectfully traversed.

The alkyl ether sulfate composition described in the present claims is a branched alkyl ether sulfate composition. This is clear by looking at X in the formula in claim 57. That group is a branched alkyl ether group. The branching is provided by Group R_2 which is a hydrocarbyl radical extending from the main alkyl ether chain. Furthermore, it can be seen that the propoxy group of the ether linkage (-O-CH_2-CH_2-CH_2-) is attached to an interior carbon of the alkyl group. The alkyl group chain starts with the CH_2 group on the left and extends to the last carbon atom in R_2.

The reference discloses sodium salts of sulfate esters of alkoxylated C 12-18 fatty alcohols containing 1-8 oxyalkylene groups/mol. These are linear surfactants which have the

oxyalkylene groups attached to the end carbon of the alkyl chain, which in this case is a C 4 alkyl group.

Page 31 of the specification describes the enhanced calcium tolerance of the sulfated branched primary alcohol compositions of the present invention as compared to the calcium tolerances of linear alkyl benzene sulfonates, lineary alkyl sulfates, and branched alkyl sulfates. In the last paragraph on page 33 of the specification, it states that the sulfates of the branched ether primary alcohols of the present invention exhibit cold water detergency values of at least 22 percent at 50°F (10°C), Krafft temperatures of 10°C or less, and a calcium tolerance of 5000 ppm $CaCl_2$ or more. Example A-C on pages 51 and 52 of the specification compare the properties of sulfated C_{12}, C_{14}, and C_{16} branched primary alcohols which were prepared in a manner similar to Example 6 which describes the production of the alkyl ether composition shown at page 42, line 4. The comparative materials were a sulfate of the linear NEODOL® 23 alcohol and a C_{12} linear alkyl sulfate.

The hardness tolerance of the linear alkyl sulfate was 140 ppm and the hardness tolerance of the NEODOL® 23 alcohol sulfate was 18 ppm. In contrast, the hardness tolerances of the three alkyl ether sulfates of the present invention were greater than 120,000 ppm, 30,200, ppm and 1800 ppm. The Applicants assert that this clearly shows the unexpected dramatic superiority of the alkyl ether sulfate composition of the present claims over linear sulfated alkoxylated surfactants which are closely analogous to the one described in the reference. The Applicants assert that these linear compositions are closely analogous because of their close structural similarity in the sense discussed by the Examiner on page 4 of the office action whereas as the branched composition of the present invention are not because the structures are not closely structurally similar.

Since the Applicants have clearly shown that claim compositions are different from the compositions of the reference and have provided evidence of the superiority of the claimed compositions closely analogous over the composition described in the reference, the Applicants assert that the obviousness rejection has been overcome. An early notice of allowance is respectfully requested.

Respectfully submitted,

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